

ANNUAL PROJECT SUMMARY
Communicating Strong Ground-motion in Mid-America

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Investigations Undertaken

In the central and eastern United States the information needs and experiences of ShakeMap users is suspected to influence the ways in which users access, interpret and value the ShakeMap product. This project is creating a baseline dataset of perception, information needs, and interpretive skills to meet the project goal of assessing the effectiveness of communicating risk, error and uncertainty associated with the strong ground motion hazard in mid-America. In meeting this goal the following set of research questions are explored in an effort to determine what members of each study audience actually see when they look at a ShakeMap?

1. What are the earthquake risk information needs of each user group? Can those needs be met with ShakeMap?
2. What is the best way to accurately translate ShakeMap quality metrics into information accessible to study audiences? How do we convey the uneven coverage and therefore heterogeneous uncertainty in ShakeMap products? How do we present this information in a concise and quickly interpretable value?
3. What is the best way to present the geographic distribution of the quality metrics? How do we match the metric and presentation method with the needs, tools, and skills available to the customer? How do we most effectively maximize the utility of an imperfect product and minimize misinterpretation?

Necessary tasks to complete study:

Data Collection

- Survey Instrument Design and Testing
- Survey Instrument Distribution and Implementation
- Focus Group Design and Implementation
- Transcription of Focus Group Meetings

Data Analysis and Interpretation

- Statistical and Content Analysis

Results

Progress to date focuses on the preparation of ShakeMap scenario figures which provide the primary content of the survey instrument to be administered to study audience members. The survey instrument is currently under development and design, with questions related to the informational needs, earthquake experience, map cognition and spatial skills in draft form. The survey audiences for this study include: Emergency Managers and Public Information Officers for the Central United States Earthquake Consortium member states and affiliate member states; State Geologists from the Central United States Earthquake Consortium member states and affiliate member states; and the General Public for the same region. A database of the survey recipients is currently being compiled and contact information verified. The survey instrument

testing and implementation protocol has been established. Graphics needs for focus group meetings are being determined and generated.

Non-Technical Summary

This project will explore the needs, uses, access, and interpretation of the USGS ShakeMap product in Mid-America. Multiple audiences are expected to access the ShakeMap products and each audience may have different needs and skills. These differences may influence the message received by users. Learning what users actually see and take from a ShakeMap motivates this project. Determining the effectiveness of the product in meeting needs and communicating the intended messages is the project goal. To meet the goal a sample of members from each study audience will be surveyed to collect baseline information regarding information needs, earthquake experience, and map interpretation skills. Focus groups will be used to supplement the survey and explore the ways that maps are accessed and interpreted as well as to detect systematic biases in product interpretation.